

Set	Items	Description
S1	563	(SNAPSHOT? OR MIRROR? OR COPY??? OR COPIE? ? OR IMAGE? OR - IMAGING OR CAPTUR? OR REPLICA? OR CLONE?) (5N) (FILESYSTEM? ? OR FILE()SYSTEM? ?)
S2	110	S1(7N) (CREAT? OR PRODUC? OR DEVELOP? OR ORIGINAT? OR MAKE? OR MAKING? OR MADE OR GENERAT?)
S3	20	S1(7N) (DELET? OR REMOV? OR ERADICAT? OR ELIMINAT? OR ERAS?- ?? OR MARK??? (2N)FREE??? ? OR EXPUNG? OR EMPT??? ? OR DISCAR- D?)
S4	2012145	SUMMARY() (MAP OR MAPS) OR TABLE? OR FILE? ? OR DATABASE? OR RECORD?
S5	2991117	DEALLOCAT? OR DE()ALLOCAT? OR FREE OR INACTIV? OR OPEN??? - OR UNUSE? ? OR "NOT"(1N)USE? ? OR NON()ALLOCAT? OR NONALLOCAT? OR UNASSIGN? OR UN()ASSIGN?
S6	11795864	ALLOCAT? OR CLOSE? ? OR OCCUPIE? ? OR USE? ? OR RESERV? OR ASSIGN? OR "NOT"()FREE???
S7	6	S2 AND S3 AND S4 AND S5 AND S6
S8	14	S3 NOT S7
S9	429198	(SNAPSHOT? OR MIRROR? OR COPY??? OR COPIE? ? OR IMAGE? OR - IMAGING OR CAPTUR? OR REPLICA? OR CLONE?) (7N) (FILE? ? OR RECO- RD? ? OR DATA? ? OR INFORMATION?? OR CONTENT? ? OR DATABASE? - OR REPOSITOR?)
S10	82802	S9(7N) (CREAT? OR PRODUC? OR DEVELOP? OR ORIGINAT? OR MAKE? OR MAKING? OR MADE OR GENERAT?)
S11	11213	S9(7N) (DELET? OR REMOV? OR ERADICAT? OR ELIMINAT? OR ERAS?- ?? OR MARK??? (2N)FREE??? ? OR EXPUNG? OR EMPT??? ? OR DISCAR- D?)
S12	66	S10 AND S11 AND S4 AND S5 AND S6
S13	0	S12 AND INCLUSIVE()"OR" OR INCLUSIVEOR
S14	60	S12 NOT S7:S8
S15	48	S14 NOT (PR>2000 OR PR=2001:2007)
S16	2	S15 AND SNAPSHOT?
S17	46	S15 NOT S16
S18	310	AU=(LEWIS B? OR LEWIS, B?)
S19	1005	AU=(EDWARDS J? OR EDWARDS, J?)
S20	49	AU=(VISWANATHAN S? OR VISWANATHAN, S?)
S21	0	BLAKE(2N)LEWIS OR (JOHN??? OR JON???) (2N)EDWARDS OR SRINI- VASAN(2N)VISWANATHAN
S22	2	S18 AND S19 AND S20
S23	47	S18:S20 AND (S1 OR S9)
S24	21	S23 AND (FILE(1N)SYSTEM? OR FILESYSTEM? OR FILE()MANAGEMEN- T()SYSTEM?)
S25	21	S24 AND (SNAPSHOT? OR MIRROR? OR COPY??? OR COPIE? ? OR IM- AGE? OR IMAGING OR CAPTUR? OR REPLICA? OR CLONE?)
S26	20	S25 NOT (PR>2000 OR PR=2001:2007)
File 350:Derwent WPIX 1963-2006/UD=200708		
(c) 2007 The Thomson Corporation		
File 347:JAPIO Dec 1976-2006/Oct(Updated 070201)		
(c) 2007 JPO & JAPIO		

**Your Assignee is INV*

7/69,K/4 (Item 4 from file: 350)
DIALOG(R) File 350:Derwent WPIX
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0012730817 - Drawing available
WPI ACC NO: 2002-583156/200262
Related WPI Acc No: 2002-435358
XRPX Acc No: N2002-462519

File and directory content capturing method for file system, involves refraining from writing data in storage blocks in response to active map or copy of active map recorded in file system

Patent Assignee: NETWORK APPLIANCE INC (NETW-N)

Inventor: EDWARDS J; LEWIS B; VISWANATHAN S

Patent Family (1 patents, 1 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update
US 20020083037	A1	20020627	US 2000642061	A	20000818	200262 B
			US 2001932578	A	20010817	

Priority Applications (no., kind, date): US 2000642061 A 20000818; US 2001932578 A 20010817

Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
US 20020083037	A1	EN	14	5	C-I-P of application US 2000642061

Alerting Abstract US A1

NOVELTY - Active map is recorded in the file system of storage blocks not available for writing data. Consistency point including a copy of the active map is recorded in the file system. Writing of data in the storage blocks is refrained in response to the active map and the copy of the active map.

DESCRIPTION - INDEPENDENT CLAIMS are included for the following:

- 1.Previous version saving method;
- 2.File system operating method;
3. Summary map updating method; and
- 4.Active map updating method.

USE - File and directory content capturing method for file system of data storage system.

ADVANTAGE - Enables creating and deleting snapshots quickly and capture the contents of the files and directories in the file system, quickly and efficiently.

DESCRIPTION OF DRAWINGS - The figure shows the block diagram of the instant snapshot system.

Title Terms/Index Terms/Additional Words: FILE ; DIRECTORY; CONTENT; CAPTURE; METHOD; SYSTEM; WRITING; DATA; STORAGE; BLOCK; RESPOND; ACTIVE; MAP; COPY; RECORD

Class Codes

International Classification (Main): G06F-007/00

File Segment: EPI;

DWPI Class: T01

Manual Codes (EPI/S-X): T01-F05E; T01-H01C2; T01-J05B2

File and directory content capturing method for file system, involves refraining from writing data in storage blocks in response to active map or copy of active map recorded in file system

Alerting Abstract ...NOVELTY - Active map is recorded in the file system of storage blocks not available for writing data. Consistency point including a copy of the active map is recorded in the file system. Writing of data in the storage blocks is refrained in response to the active...

...Previous version saving method; File system operating method; **Summary** map updating method; and Active map updating method...

...USE - File and directory content capturing method for file system of data storage system.

...capture the contents of the files and directories in the file system, quickly and efficiently.

Title Terms/Index Terms/Additional Words: FILE ; ...

... RECORD

Original Publication Data by Authority

Original Abstracts:

The invention provides an improved method and apparatus for creating a snapshot of a file system. In a first aspect of the invention, a "copy-on-write" mechanism is used. An effective snapshot mechanism must be efficient both in its use of storage space and in the time needed to create it because file systems are often large. The snapshot uses the same blocks as the active file system until the active file system is modified. Whenever a modification occurs, the modified data is copied to a new block and the old...

...henceforth called "copy-on-write"). In this way, the snapshot only uses space where it differs from the active file system, and the amount of work required to create the snapshot is small. In a second aspect of the invention, a record of which blocks are being used by the snapshot is included in the snapshot itself, allowing effectively instantaneous snapshot creation and deletion. In a third aspect of the invention, the state of the active file system is described by a set of metafiles; in particular, a bitmap (henceforth the "active map") describes which blocks are free and which are in use. The inode file describes which blocks are used by each file, including the metafiles. The inode file itself is described by a special root inode, also known as the "fsinfo block". The system begins creating a...

...states for creating the snapshot such as the location of all files and directories in the file system, it. During subsequent updates of the active file system, the system consults the bitmap included in the snapshot (the "snapmap") to determine whether a block is free for reuse or belongs to the snapshot. This mechanism allows the active file system to keep track of which blocks each snapshot uses without recording any additional bookkeeping information in the file system. In a fourth aspect of the invention, a snapshot can also be deleted instantaneously simply by discarding its...

...of the invention, the performance overhead associated with the search for free blocks is reduced by the inclusion of a summary file. The summary file identifies blocks that are used by at least one snapshot; it is the logical OR of all the snapmap files. The write allocation code decides whether a block is free by examining the active map and the summary file. The active map indicates whether the block is currently in use in the active file system. The summary file indicates whether the block is used by any snapshot. In a sixth aspect of the invention, the summary file is updated in the background after the creation or deletion of a snapshot. This occurs concurrently with other file system operations. Two bits are stored in the file system "fsinfo block" for each snapshot. These two bits indicate whether the summary file needs to be updated using the snapshot's snapmap information as a consequence of its creation or deletion. When a block is freed in the active file system, the corresponding block of the summary file is updated with the snapmap from the most recently created snapshot, if this has not already been done. An in-core bit map records the completed updates to avoid repeating them unnecessarily. This ensures that the combination of the active bitmap and the summary file will consistently identify all blocks that are currently in use. Additionally, the summary file is updated to reflect the effect of any recent snapshot deletions when freeing a block in the active file system. This allows reuse of blocks that are now entirely free. After updating the summary file following a snapshot creation or deletion, the corresponding bit in the fsinfo block is adjusted. In a seventh aspect...

...the next oldest and next youngest snapshot. A block that was used by the deleted snapshot but is not used by its neighbors can be marked free in the summary file, as no remaining snapshot is using it. However, these freed blocks cannot be reused immediately, as the snapmap of...

...must be preserved until summary updating is complete. During a snapdelete, free blocks are found by using the logical OR of the active bitmap, the summary file, and the snapmaps of all snapshots for which post-deletion updating is in progress. In other words, the snapmap...

...updating. In the preferred embodiment, the invention is operative on WAFL file system. However, it is still possible for the invention to be applied to any computer data storage system such as a database system or a store and forward system such as cache or RAM if the data is kept for a...

Claims:

1. A method for capturing the contents of the files and directories in a file system, said file system comprising a set of storage blocks in a mass storage system including steps for recording an active map in said file system of said storage blocks not available for writing data; recording a consistency point in said file system including a consistent version of said file system at a previous time, said consistency point including a copy of said active map at said previous time; and refraining from writing...

8/69,K/7 (Item 7 from file: 350)
DIALOG(R) File 350:Derwent WPIX
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0014362066 - Drawing available

WPI ACC NO: 2004-550694/

XRPX Acc No: N2004-435398

Computer-based table of contents imaging method in photography field,
involves storing link to directory in table of contents for stored images,
so that presentation pathname is mapped to restrictive pathname, during
directory access

Patent Assignee: EASTMAN KODAK CO (EAST)

Inventor: WHITCHER T J

Patent Family (1 patents, 1 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update
US 6760065	B1	20040706	US 2000534390	A	20000324	200453 B

Priority Applications (no., kind, date): US 2000534390 A 20000324

Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
US 6760065	B1	EN	12	7	

Alerting Abstract US B1

NOVELTY - A directory for file system, with file name having restrictive
pathname, and image table of contents (TOC) including presentation file
name with presentation pathname selected by camera user, are stored in
removable storage. A link to the directory is stored in TOC for stored
images, so that the presentation pathname is mapped to restrictive
pathname, when directory is accessed for presentation by user interface.

DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

- 1.image table of contents format; and
- 2.method for managing removable storage device used in digital camera.

USE - For imaging table of contents on removable storage such as floppy
disk, compact disk (CD) and compact flash cards used with computer or
digital cameras, in field of photography.

ADVANTAGE - The inclusion of standardized image table of contents file on
removable storage, enables the presentation of consistent user interface on
receiving system even when the removable storage has been recorded with
varying file systems and file conventions. The stored image table of
contents provides efficient management of PIMA 15740 ObjectInfo datasets
by persistently associating datasets with objects on removable storage.

DESCRIPTION OF DRAWINGS - The figures show the flowchart illustrating the
sequence of events that occur when removable storage having image table of
contents is inserted into computer or digital camera, and the block diagram
of the digital camera system.

Title Terms/Index Terms/Additional Words: COMPUTER; BASED; TABLE; CONTENT;
IMAGE; METHOD; PHOTOGRAPH; FIELD; STORAGE; LINK; DIRECTORY; SO; PRESENT;
MAP; RESTRICT; ACCESS

Class Codes

International Classification (Main): H04N-005/76

File Segment: EPI;

DWPI Class: T01

Manual Codes (EPI/S-X): T01-F05E; T01-J05B2A

Alerting Abstract ...consistent user interface on receiving system even when the removable storage has been recorded with **varying** file systems and file conventions. The **stored image** table of contents provides efficient **management** of PIMA 15740 ObjectInfo datasets by persistently associating datasets with objects on removable storage...

8/69,K/9 (Item 9 from file: 350)
DIALOG(R)File 350:Derwent WPIX
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0013600530 - Drawing available
WPI ACC NO: 2003-695580/200366
XRPX Acc No: N2003-555369

Embedded operating system failsafe recovery method, involves formatting distribution disk partition if corruption is found in distribution disk and copying backup primary image from boot disk when image is not found

Patent Assignee: HEWLETT-PACKARD DEV CO LP (HEWP)

Inventor: CRAWFORD K E; VANROOVEN R M

Patent Family (1 patents, 1 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update
US 6591376	B1	20030708	US 2000517026	A	20000302	200366 B

Priority Applications (no., kind, date): US 2000517026 A 20000302

Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
US 6591376	B1	EN	24	5	

Alerting Abstract US B1

NOVELTY - The method involves booting an initial operating system kernel and formatting distribution disk partition if corruption is found in the partition. When a primary image is not found within the distribution disk, a backup primary image from a boot disk (108) is copied to a distribution disk to replace the corrupted image. A final embedded operating file system is mounted and launched.

DESCRIPTION - An INDEPENDENT CLAIM is also included for an electronic device controlled by an embedded operating system.

USE - Used for failsafe recovery in embedded operating systems.

ADVANTAGE - The method facilitates the use of boot disk partition as a disk-based ROM, thereby automatically detecting and correcting the file system corruption and primary image corruption without user intervention. The method eliminates the expensive ROM component employed in currently available peripheral consumer electronic devices.

DESCRIPTION OF DRAWINGS - The drawing shows a block diagram of a typical computing environment managed by an embedded operating system.

108 Boot disk.

Title Terms/Index Terms/Additional Words: EMBED; OPERATE; SYSTEM; FAIL-SAFE ; RECOVER; METHOD; FORMAT; DISTRIBUTE; DISC; PARTITION; CORRUPT; FOUND; COPY; PRIMARY; IMAGE; BOOT

Class Codes

International Classification (Main): H02H-003/05

File Segment: EPI;

DWPI Class: T01

Manual Codes (EPI/S-X): T01-F05B2; T01-F05G; T01-G03; T01-G05A; T01-H05A

Alerting Abstract ...of boot disk partition as a disk-based ROM, thereby automatically detecting and correcting the file system corruption and primary image corruption without user intervention. The method eliminates the expensive ROM component employed in currently available peripheral consumer electronic devices...

8/69,K/13 (Item 13 from file: 350)
DIALOG(R)File 350:Derwent WPIX
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0005443805 - Drawing available
WPI ACC NO: 1991-043572/199106

Image data filing system for document - writes correction information to
image file, and erases dot image information

Patent Assignee: HITACHI LTD (HITA)
Inventor: HANANOI T; KAWACHIYA S; TAKEDA H
Patent Family (1 patents, 1 countries)

Patent			Application			
Number	Kind	Date	Number	Kind	Date	Update
US 4985930	A	19910115	US 1988246978	A	19880920	199106 B

Priority Applications (no., kind, date): JP 1987237125 A 19870924; JP
198898107 A 19880422

Title Terms/Index Terms/Additional Words: IMAGE; DATA; FILE; SYSTEM;
DOCUMENT; WRITING; CORRECT; INFORMATION; ERASE; DOT

Class Codes

(Additional/Secondary): G06K-009/00

File Segment: EPI;
DWPI Class: T01; W02
Manual Codes (EPI/S-X): T01-J05B; T01-J10; W02-J03A; W02-J09

Original Publication Data by Authority

Original Abstracts:

...on the correction paper which is in turn inputted to the image file
system with an image reader. The image file system erases the
dot image information of the image inputted with the image reader.
The obtained correction information is synthesized with the original image
...

8/69,K/14 (Item 14 from file: 350)
DIALOG(R)File 350:Derwent WPIX
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0003434405

WPI ACC NO: 1985-205635/

Image information deletion for picture file system - deleting
information corresponding to assigned retrieval code NoAbstract Dwg 0/4

Patent Assignee: TOSHIBA KK (TOKE)

Inventor: HIROSE K

Patent Family (1 patents, 1 countries)

Patent Application

Number	Kind	Date	Number	Kind	Date	Update
JP 60117975	A	19850625	JP 1983225728	A	19831130	198534 B

Priority Applications (no., kind, date): JP 1983225728 A 19831130

Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
JP 60117975	A	JA	6		

Title Terms/Index Terms/Additional Words: IMAGE; INFORMATION; DELETE;
PICTURE; FILE; SYSTEM; CORRESPOND; ASSIGN; RETRIEVAL; CODE; NOABSTRACT

Class Codes

(Additional/Secondary): G09G-001/06, G11B-027/10, H04N-005/78

File Segment: EngPI; EPI;

DWPI Class: T03; T04; W04; P85

Manual Codes (EPI/S-X): T03-J; T03-K; T04-H01; W04-H

Image information deletion for picture file system -

17/69,K/16 (Item 16 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2007 The Thomson Corporation. All rts. reserv.

0010591522 - Drawing available

WPI ACC NO: 2001-196784/200120

XRFX Acc No: N2001-140660

Image decoding display device for communication application, has frame memory with empty sector to store decoded data in dynamic mapping mode, when searched sector is empty with respect to sector information table
Patent Assignee: MITSUBISHI DENKI KK (MITQ); MITSUBISHI ELECTRIC CORP (MITQ)

Inventor: OGAWARA R; OHKAWAHARA R; TAKABATAKE A; TAKAHATA A

Patent Family (2 patents, 2 countries)

Patent			Application			
Number	Kind	Date	Number	Kind	Date	Update
JP 2001016593	A	20010119	JP 1999180371	A	19990625	200120 B
US 6490058	B1	20021203	US 1999436248	A	19991109	200301 E

Priority Applications (no., kind, date): JP 1999180371 A 19990625

Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
JP 2001016593	A	JA	19	16	

Alerting Abstract JP A

NOVELTY - Controller (1) controls decoding of input data which is written in frame memory (5), based on control by frame memory interface (3). When searched frame memory has empty sector relative to sector information table showing sector usage information. Decoded image data is written in idle sector by dynamic mapping mode. Format of data stored in frame memory is converted and output to video interface (4).

USE - For communication application to display image data that is compressed by moving picture experts group system.

ADVANTAGE - Since decoded image data is stored by dynamic mapping mode, normal image decoding display is performed even if capacity of memory is reduced.

DESCRIPTION OF DRAWINGS - The figure shows the block diagram of image decoding display device.

1 Control unit

3,4 Interfaces

5 Memory

Title Terms/Index Terms/Additional Words: IMAGE; DECODE; DISPLAY; DEVICE; COMMUNICATE; APPLY; FRAME; MEMORY; EMPTY; SECTOR; STORAGE; DATA; DYNAMIC; MAP; MODE; SEARCH; RESPECT; INFORMATION; TABLE

Class Codes

International Classification (Main): H04N-001/32, H04N-007/32

(Additional/Secondary): G06T-001/60, H04N-001/41, H04N-005/907, H04N-005/92

File Segment: EPI;

DWPI Class: T01; W02; W04

Manual Codes (EPI/S-X): T01-J10A2; W02-F07C; W02-J03B; W04-F01F; W04-F01M; W04-P01C5

...data in dynamic mapping mode, when searched sector is empty with respect to sector information table

Alerting Abstract ...memory (5), based on control by frame memory interface (3). When searched frame memory has empty sector relative to sector information table showing sector usage information. Decoded

image data is written in idle sector by dynamic mapping mode. Format of data stored in frame...

USE - For communication application to display image data that is compressed by moving picture experts group...

Title Terms.../Index Terms/Additional Words: TABLE

Original Publication Data by Authority

Original Abstracts:

...in order to search and fetch an unused sector. The frame memory interface (3) allocates the unused sector in the bank 2 when decoded image data are written into the bank 2, and release the used sector when the decoded image data are read from the bank 2.

Claims:

...control section, and for generating decoded image data; a frame memory comprising banks, a memory size of each of which is one frame for storing said decoded image data, and a bank made up of a plurality of sectors and whose memory size is not less than 0.5 frame for storing said decoded image data of a frame B, a...

...of each of said plurality of sectors in said frame memory in order to search unused sector, and allocates said unused sector when said frame memory interface writes said decoded image data into said frame memory, and release said used sector when decoded image data are read.

17/69,K/22 (Item 22 from file: 350)
DIALOG(R)File 350:Derwent WPIX
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0010313511

WPI ACC NO: 2000-627628/200060
Related WPI Acc No: 2000-237104
XRPX Acc No: N2000-464973

Erasing of shadow copies from persistent secondary storage in computer system used in user data transaction processing, involves erasing name of one selected structure storage after lost closing of that storage

Patent Assignee: MICROSOFT CORP (MICT)

Inventor: PELTONEN K G; RAJU S C V

Patent Family (1 patents, 1 countries)

Patent			Application				
Number	Kind	Date	Number	Kind	Date	Update	
US 6078999	A	20000620	US 1997785820	A	19970109	200060	B
			US 1998222059	A	19981229		

Priority Applications (no., kind, date): US 1997785820 A 19970109; US 1998222059 A 19981229

Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
US 6078999	A	EN	25	15	Division of application US 1997785820

Division of patent US 6035379

Alerting Abstract US A

NOVELTY - Shadow copy of user data stream held by selected structured storages, is generated by opening selected storages. Names of selected storages, are added to transaction table stored in persistent secondary storage based on opened storages. One of the selected storage is last closed. Name of closed storage is erased. The shadow copies of data stream of selected storage whose names remain in table is deleted.

DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

- 1.shadow copies erasing system;
- 2.shadow copies erasing program stored in recording medium

USE - For erasing shadow copies from persistent secondary storage for user data recovery in computer system for user data transaction processing during transfer of funds between bank accounts.

ADVANTAGE - Makes shadow copies of data streams rather than structured storages to decrease amount of memory required to maintain shadow copies, hence strikes balances between simple implementation and minimizing memory requirement. More than one data stream can be renamed since the transaction can modify more than one stream before committing the predefined changes.

DESCRIPTION OF DRAWINGS - The figure depicts flowchart explaining the steps involved in user data recovery.

Title Terms/Index Terms/Additional Words: ERASE; SHADOW; COPY; PERSISTENT; SECONDARY; STORAGE; COMPUTER; SYSTEM; USER; DATA; TRANSACTION; PROCESS; NAME; ONE; SELECT; STRUCTURE; AFTER; LOST; CLOSE

Class Codes

International Classification (Main): G06F-012/16

File Segment: EPI;
DWPI Class: T01; T05

Manual Codes (EPI/S-X): T01-H01C4; T01-J05A1; T05-L02

Erasing of shadow copies from persistent secondary storage in computer system used in user data transaction processing, involves erasing name of one selected structure storage after lost closing of...

Original Titles:

Recovering from a failure using a transaction table in connection with shadow copy transaction processing.

Alerting Abstract ...NOVELTY - Shadow copy of user data stream held by selected structured storages, is generated by opening selected storages. Names of selected storages, are added to transaction table stored in persistent secondary storage based on opened storages. One of the selected storage is last closed. Name of closed storage is erased. The shadow copies of data stream of selected storage whose names remain in table is deleted....copies erasing system; shadow copies erasing program stored in recording medium

...USE - For erasing shadow copies from persistent secondary storage for user data recovery in computer system for user data transaction processing during transfer of funds between bank accounts...

...ADVANTAGE - Makes shadow copies of data streams rather than structured storages to decrease amount of memory required to maintain shadow copies, hence strikes balances between simple implementation and minimizing

Title Terms.../Index Terms/Additional Words: USER ; ...

... CLOSE

Original Publication Data by Authority

Original Abstracts:

A system for performing transaction processing on user data maintains a transaction table. The transaction table holds the identities of structured storages that have been opened but not yet closed by each of the transactions that are accessing the structured storages. Each time that a stream holding user data is opened in a write mode, an internal copy of the stream is made. Changes are applied...

...that was in progress at the time of the failure is undone. Then the transaction table is read to identify each of the structured storages that must be opened and processed to remove any remaining internal copies of streams. In summary, the system provides robust multiuser transacted access to user data through file system metadata transactions and uses a transaction table to optimize system recovery.

Claims:

...storage and a persistent secondary storage, the computer system supporting transaction processing of user data using shadow copying, a method of removing shadow copies from the persistent secondary storage as part of a recovery from a failure, comprising the...

...partition being capable of holding one or more objects that contain user data; providing a transaction table, stored in the persistent secondary storage, for holding names of partitions that have been opened by transactions; opening selected partitions for writing by transactions, a shadow copy of at least one object held by each of the selected partitions being generated...

...selected partitions to the transaction table in response to the selected partitions being opened; performing a last close on at least one, but not all, of the selected partitions; removing the name of each of said at least one of the selected partitions in response...

...being closed; and recovering from a failure, including deleting any shadow copies of the at least one object of the selected partitions whose names remain in the transaction table.

17/69,K/29 (Item 29 from file: 350)
DIALOG(R)File 350:Derwent WPIX
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0005985717 - Drawing available

WPI ACC NO: 1992-219718/199227

XRPX Acc No: N1992-166872

Non-volatile semiconductor memory erasable in blocks - makes copy during clean-up operation prior to erasure of active block

Patent Assignee: INTEL CORP (ITLC)

Inventor: ELBERT D K; LEVY M A; ROBINSON K B

Patent Family (6 patents, 4 countries)

Patent Number	Kind	Date	Application Number	Kind	Date	Update
GB 2251324	A	19920701	GB 199124994	A	19911125	199227 B
FR 2671223	A1	19920703	FR 199116233	A	19911227	199236 E
GB 2251324	B	19950510	GB 199124994	A	19911125	199522 E
US 5544356	A	19960806	US 1990636238	A	19901231	199637 E
			US 1993153666	A	19931116	
			US 1995400272	A	19950303	
US 5592669	A	19970107	US 1990636238	A	19901231	199708 E
			US 1995395916	A	19950228	
			US 1995565929	A	19951201	
JP 3476842	B2	20031210	JP 1991356593	A	19911225	200382 E

Priority Applications (no., kind, date): US 1995565929 A 19951201; US 1995400272 A 19950303; US 1995395916 A 19950228; US 1993153666 A 19931116; US 1990636238 A 19901231

Patent Details

Number	Kind	Lan	Pg	Dwg	Filing Notes
GB 2251324	A	EN	89	16	
GB 2251324	B	EN	2		
US 5544356	A	EN	30	16	Continuation of application US 1990636238
					Continuation of application US 1993153666
US 5592669	A	EN	29	16	Continuation of application US 1990636238
					Continuation of application US 1995395916
JP 3476842	B2	JA	30		Previously issued patent JP 06139140

Alerting Abstract GB A

The non-volatile semiconductor memory has an active block for storing a first file, a reserve block for storing a second file, and a directory block. The second file is a copy of the first file. The copy is made during a clean-up operation prior to erasure of the active block. The directory block has a directory entry for identifying the first file. The file structure allows flash EEPROMS to be used as mass storage instead of magnetic discs.

Non-deleted files are duplicated in a reserve block before the active block is erased. The space occupied by deleted files in the active block is released during the clean-up operation.

ADVANTAGE - Improved reliability.

Title Terms/Index Terms/Additional Words: NON; VOLATILE; SEMICONDUCTOR; MEMORY; ERASE; BLOCK; COPY; CLEAN; UP; OPERATE; PRIOR; ACTIVE

Class Codes

International Classification (Main): G06F-012/02, G06F-017/30, G11C-016/02

(Additional/Secondary): G06F-012/00, G06F-015/78, G11C-014/00

File Segment: EPI;
DWPI Class: T01
Manual Codes (EPI/S-X): T01-H01; T01-H01B3

Original Titles:

... File structure for a non-volatile block-erasable semiconductor flash memory.

Alerting Abstract ...The non-volatile semiconductor memory has an active block for storing a first file , a reserve block for storing a second file , and a directory block. The second file is a copy of the first file . The copy is made during a clean-up operation prior to erasure of the active block. The directory block has a directory entry for identifying the first file . The file structure allows flash EEPROMS to be used as mass storage instead of magnetic discs...

...Non-deleted files are duplicated in a reserve block before the active block is erased. The space occupied by deleted files in the active block is released during the clean-up operation...

Original Publication Data by Authority

Original Abstracts:

...volatile semiconductor memory comprises an active block for storing a first file, a reserve block for storing a second file, and a directory block . The second file is a copy of the first file . The copy is made during a clean- up operation prior to erasure of the active block. The directory block comprises a directory entry for identifying the first file.

...
...active block for storing a first file, a reserve block for storing a second file, and a directory block. The second file is a copy of the first file. The copy is made during a clean-up operation prior to erasure of the active block. The directory block comprises a directory entry for identifying the first file.

Claims:

The non-volatile semiconductor memory has an active block for storing a first file , a reserve block for storing a second file , and a directory block. The second file is a copy of the first file . The copy is made during a clean-up operation prior to erasure of the active block. The directory block has a directory entry for identifying the first file . The file structure allows flash EEPROMS to be used as mass storage instead of magnetic discs...

...Non-deleted files are duplicated in a reserve block before the active block is erased. The space occupied by deleted files in the active block is released during the clean-up operation...

...a memory that is a block-erasable nonvolatile semiconductor memory; (B) a controller that (1) allocates (a) a first portion of the memory storing an active file and a deleted file ; (b) a second portion of the memory serving as a free portion of the memory; (c) a third portion of the memory storing information as to whether a portion of the memory is allocated to store the active and deleted files or allocated to serve as a free portion of the memory; (d) a fourth portion of the memory storing a number of...

...has been cycled; (e) a fifth portion of the memory storing a directory of active files ; (2) stores a copy of the active file in the second portion of the memory and erases the first portion of the memory...
...is claimed is: A processor-controlled method of file management for a nonvolatile semiconductor memory with a plurality of physical erase blocks, wherein bits of the memory cannot be overwritten from...

...method comprising the steps of: (1) allocating a first physical erase block of the memory for storing an active file and a deleted file; (2) allocating a second physical erase block of the memory for storing a copy of the active file; (3) storing in an allocated first portion of a third physical erase block of the memory information as to whether a physical erase block of the memory has been allocated to store the active and deleted files or allocated to store the copy of the active file; (4) reclaiming memory space by storing in the second physical erase block of the memory the copy of the active file and by erasing the entire first physical erase block of the memory in order to permit reuse of the first physical erase block of the memory for storage; (5) tracking a number of times a physical erase block...

...portion of the third physical erase block of the memory; (6) storing in an allocated third portion of the third physical erase block of the memory a directory of active files; (7) minimizing cycling distributions between physical erase blocks of the memory by choosing for reclamation a physical erase block of the memory with a lowest cycle count...

...of physical erase blocks, wherein bits of the memory cannot be overwritten from a first logical state to a second logical state without a prior erasure, wherein erasure is by physical...

...block for storing an active file and a deleted file; (2) allocating a second portion of the memory in a second physical erase block for storing a copy of the active file; (3) storing in an allocated third portion of the memory information as to whether a portion of the memory has been allocated to store the active and deleted files or allocated to store the copy of the active file; (4) reclaiming memory space by storing in the second portion of the memory the copy of the active file and by erasing the first physical erase block including the first portion of the memory in order to permit reuse of the first portion of the memory for storage; (5) storing data in the first and second portions of the memory in a linked-list variable file structure.

17/9/45 (Item 11 from file: 347)
DIALOG(R)File 347:JAPIO
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04860015 **Image available**
DATA BASE REORGANIZATION SYSTEM

PUB. NO.: 07-152615 [JP 7152615 A]
PUBLISHED: June 16, 1995 (19950616)
INVENTOR(s): FUJITA ASAKO
APPLICANT(s): NEC CORP [000423] (A Japanese Company or Corporation), JP
(Japan)
APPL. NO.: 05-323105 [JP 93323105]
FILED: November 29, 1993 (19931129)
INTL CLASS: [6] G06F-012/00
JAPIO CLASS: 45.2 (INFORMATION PROCESSING -- Memory Units)

ABSTRACT

PURPOSE: To enable a reorganizing process in the 24-hour continuous operation state of a data base by generating the index part of a data base to be copied prior to the copying of data records.

CONSTITUTION: A reorganization preprocessing means 1 is actuated while the copying data base 6 is in a common-use state and the data base to be copied 7 is in an exclusive state. A user information acquiring means 3 acquires free area acquisition information 12, a data base storage control information generating means 5 generates storage control information from the information of the copying data base 6 and the free area acquisition information 12, and an index information setting means 9 generates the index part by temporarily storing dummy records, wherein index key values are set on the basis of the storage control information after the initialization of the data base to be copied 7, in the data base 7 to be copied and then deleting them. The reorganizing means 2 is actuated while the copying data base 6 and data base to be copied 7 are in a common-use state. A data base copying means 10 inputs the data records from the copying data base 6 and stores them in the data base to be copied 7.

?

Set	Items	Description
S1	188352	(SNAPSHOT? OR MIRROR? OR COPY??? OR COPIE? ? OR IMAGE? OR - IMAGING OR CAPTUR? OR REPLIC? OR CLONE?) (7N) (FILE(2N)SYSTEM? ? OR FILESYSTEM? OR RECORD? ? OR DATA? ? OR INFORMATION?? OR - CONTENT? ? OR DATABASE? OR REPOSITOR?)
S2	53084	S1(7N) (CREAT? OR PRODUC? OR DEVELOP? OR ORIGINAT? OR MAKE? OR MAKING? OR MADE OR GENERAT?)
S3	10037	S1(7N) (DELET? OR REMOV? OR ERADICAT? OR ELIMINAT? OR ERAS?- ?? OR MARK??? (2N)FREE??? ? OR EXPUNG? OR EMPT??? ? OR DISCAR- D?)
S4	1496428	SUMMARY() (MAP OR MAPS) OR TABLE? OR FILE? ? OR DATABASE? OR RECORD?
S5	1350736	DEALLOCAT? OR DE()ALLOCAT? OR FREE OR INACTIV? OR OPEN??? - OR UNUSE? ? OR "NOT"(1N)USE? ? OR NON()ALLOCAT? OR NONALLOCAT? OR UNASSIGN? OR UN()ASSIGN?
S6	2134951	ALLOCAT? OR CLOSE? ? OR OCCUPIE? ? OR USE? ? OR RESERV? OR ASSIGN? OR "NOT"()FREE???
S7	512	S2(100N)S3(100N)S4(100N)S5(100N)S6
S8	58	S7(100N) (FILE(2W)SYSTEM? ? OR FILESYSTEM? ?)
S9	21	S8 NOT (AD>2000 OR AD=2001:2007)
S10	454	S7 NOT S8
S11	2	S10(100N) (INCLUSIVE() "OR" OR INCLUSIVEOR)
S12	9	S10(100N)SNAPSHOT?
S13	31	S1(100N) (INCLUSIVE() "OR" OR INCLUSIVEOR)
S14	6	S13 NOT (AD>2000 OR AD=2001:2007)
S15	101	AU=(LEWIS B? OR LEWIS, B?)
S16	567	AU=(EDWARDS J? OR EDWARDS, J?)
S17	26	AU=(VISWANATHAN S? OR VISWANATHAN, S?)
S18	429	BLAKE(2N)LEWIS OR (JOHN??? OR JON????) (2N)EDWARDS OR SRINI- VASAN(2N)VISWANATHAN
S19	2	S15 AND S16 AND S17
S20	8	S15:S18(100N)S1
S21	10	S19:S20
S22	0	S21(100N) (INCLUSIVE() "OR" OR INCLUSIVEOR)

File 348:EUROPEAN PATENTS 1978-2007/ 200705
(c) 2007 European Patent Office

File 349:PCT FULLTEXT 1979-2007/UB=20070201UT=20070125
(c) 2007 WIPO/Thomson

9/5,K/8 (Item 8 from file: 348)
DIALOG(R) File 348:EUROPEAN PATENTS
(c) 2007 European Patent Office. All rts. reserv.

01010307

COMPUTER MEMORY ORGANIZATION AND METHOD THEREFOR
SPEICHERORGANISATION EINES RECHNERS UND VERFAHREN DAFUR
ORGANISATION D'UNE MEMOIRE INFORMATIQUE ET METHODE CORRESPONDANTE

PATENT ASSIGNEE:

Canal+ Technologies, (3376171), 34, Place Raoul Dautry, 75015 Paris, (FR)
, (Proprietor designated states: all)

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(FR)

DECLERCK, Christophe, 3, rue des Ormes Dancourt, F-28210 Senantes, (FR)

LEGAL REPRESENTATIVE:

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PATENT (CC, No, Kind, Date): EP 968468 A1 000105 (Basic)

EP 968468 B1 030226

WO 98043248 981001

APPLICATION (CC, No, Date): EP 97921753 970425; WO 97EP2112 970425

PRIORITY (CC, No, Date): EP 97400650 970321

DESIGNATED STATES: AT; BE; CH; DE; DK; ES; FI; FR; GB; GR; IE; IT; LI; LU;
MC; NL; PT; SE

EXTENDED DESIGNATED STATES: AL; LT; LV; RO; SI

INTERNATIONAL PATENT CLASS (V7): G06F-012/02

CITED PATENTS (EP B): EP 477503 A; EP 615184 A; WO 96/19809 A; GB 2251324 A
; US 3596257 A; US 5515333 A

CITED PATENTS (WO A): A X Y Y X

CITED REFERENCES (EP B):

ANONYMOUS: "Dynamic Quickcell. November 1973." IBM TECHNICAL DISCLOSURE
BULLETIN, vol. 16, no. 6, November 1973, NEW YORK, US, pages 1999-2004,
XP002048172

"MANAGING VIRTUAL STORAGE USING BIT MAPS" IBM TECHNICAL DISCLOSURE
BULLETIN, vol. 33, no. 3A, 1 August 1990, page 475/476 XP000120557

ENGELKAMP H: "HARD- UND SOFTWARE DER SET-TOP-BOXEN" RADIO FERNSEHEN
ELEKTRONIK, vol. 45, no. 8, August 1996, pages 20-23, XP000623888

WU M ET AL: "ENVY: A NON-VOLATILE, MAIN MEMORY STORAGE SYSTEM" ACM
SIGPLAN NOTICES, vol. 29, no. 11, 1 November 1994, pages 86-97,
XP000491727;

CITED REFERENCES (WO A):

ANONYMOUS: "Dynamic Quickcell. November 1973." IBM TECHNICAL DISCLOSURE
BULLETIN, vol. 16, no. 6, November 1973, NEW YORK, US, pages 1999-2004,
XP002048172

"MANAGING VIRTUAL STORAGE USING BIT MAPS" IBM TECHNICAL DISCLOSURE
BULLETIN, vol. 33, no. 3A, 1 August 1990, page 475/476 XP000120557

ENGELKAMP H: "HARD- UND SOFTWARE DER SET-TOP-BOXEN" RADIO FERNSEHEN
ELEKTRONIK, vol. 45, no. 8, August 1996, pages 20-23, XP000623888

WU M ET AL: "ENVY: A NON-VOLATILE, MAIN MEMORY STORAGE SYSTEM" ACM
SIGPLAN NOTICES, vol. 29, no. 11, 1 November 1994, pages 86-97,
XP000491727;

NOTE:

No A-document published by EPO

LEGAL STATUS (Type, Pub Date, Kind, Text):

Examination: 010530 A1 Date of dispatch of the first examination
report: 20010419

Application: 20000105 A1 Published application with search report

Change: 060802 B1 Title of invention (French) changed: 20060802

Change: 060802 B1 Title of invention (English) changed: 20060802

Change: 060802 B1 Title of invention (German) changed: 20060802

Lapse: 040922 B1 Date of lapse of European Patent in a contracting state (Country, date): AT 20030226, BE 20030226, CH 20030226, LI 20030226, DE 20030527, DK 20030526, ES 20030828, FI 20030226, GR 20030226, IE 20030425, LU 20030425, NL 20030226, PT 20030526, SE 20030526,

Lapse: 040922 B1 Date of lapse of European Patent in a contracting state (Country, date): AT 20030226, BE 20030226, CH 20030226, LI 20030226, DE 20030527, DK 20030526, ES 20030828, FI 20030226, GR 20030226, IE 20030425, LU 20030425, NL 20030226, PT 20030526, SE 20030526,

Lapse: 040303 B1 Date of lapse of European Patent in a contracting state (Country, date): AT 20030226, BE 20030226, CH 20030226, LI 20030226, DE 20030527, DK 20030526, ES 20030828, FI 20030226, GR 20030226, NL 20030226, PT 20030526, SE 20030526,

Lapse: 040128 B1 Date of lapse of European Patent in a contracting state (Country, date): AT 20030226, CH 20030226, LI 20030226, DE 20030527, DK 20030526, ES 20030828, FI 20030226, GR 20030226, NL 20030226, PT 20030526, SE 20030526,

Lapse: 040107 B1 Date of lapse of European Patent in a contracting state (Country, date): AT 20030226, CH 20030226, LI 20030226, DK 20030526, FI 20030226, GR 20030226, NL 20030226, PT 20030526, SE 20030526,

Lapse: 031112 B1 Date of lapse of European Patent in a contracting state (Country, date): CH 20030226, LI 20030226, FI 20030226, GR 20030226, NL 20030226, PT 20030526, SE 20030526,

Lapse: 031008 B1 Date of lapse of European Patent in a contracting state (Country, date): CH 20030226, LI 20030226, FI 20030226, NL 20030226, SE 20030526,

Lapse: 030806 B1 Date of lapse of European Patent in a contracting state (Country, date): SE 20030526,

Assignee: 020918 A1 Transfer of rights to new applicant: Canal+ Technologies (3376171) 34, Place Raoul Dautry 75015 Paris FR

Change: 020529 A1 Title of invention (German) changed: 20020410

Change: 020529 A1 Title of invention (English) changed: 20020410

Change: 020529 A1 Title of invention (French) changed: 20020410

Grant: 030226 B1 Granted patent

Lapse: 031001 B1 Date of lapse of European Patent in a contracting state (Country, date): CH 20030226, LI 20030226, SE 20030526,

Lapse: 031022 B1 Date of lapse of European Patent in a contracting state (Country, date): CH 20030226, LI 20030226, FI 20030226, NL 20030226, PT 20030526, SE 20030526,

Lapse: 031119 B1 Date of lapse of European Patent in a contracting state (Country, date): AT 20030226, CH 20030226, LI 20030226, FI 20030226, GR 20030226, NL 20030226, PT

20030526, SE 20030526,

Lapse: 040121 B1 Date of lapse of European Patent in a contracting state (Country, date): AT 20030226, CH 20030226, LI 20030226, DK 20030526, ES 20030828, FI 20030226, GR 20030226, NL 20030226, PT 20030526, SE 20030526,

Oppn None: 040218 B1 No opposition filed: 20031127

Lapse: 040714 B1 Date of lapse of European Patent in a contracting state (Country, date): AT 20030226, BE 20030226, CH 20030226, LI 20030226, DE 20030527, DK 20030526, ES 20030828, FI 20030226, GR 20030226, IE 20030425, NL 20030226, PT 20030526, SE 20030526,

Lapse: 050112 B1 Date of lapse of European Patent in a contracting state (Country, date): AT 20030226, BE 20030226, CH 20030226, LI 20030226, DE 20030527, DK 20030526, ES 20030828, FI 20030226, GR 20030226, IE 20030425, LU 20030425, MC 20030430, NL 20030226, PT 20030526, SE 20030526,

Application: 990414 A1 International application (Art. 158(1))

Examination: 20000105 A1 Date of request for examination: 19991020

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	200309	953
CLAIMS B	(German)	200309	937
CLAIMS B	(French)	200309	1127
SPEC B	(English)	200309	6398

Total word count - document A 0

Total word count - document B 9415

Total word count - documents A + B 9415

...SPECIFICATION generally ROM-like, in that it is non-volatile. It is also intended to be **used** in a generally ROM-like manner, being read from but not written to. However, flash A controller **creates** a cluster **information copy** sector in RAM before **erasing** the cluster, and reconstructs the information when initializing a cluster.
EP 0,477,503 describes...

...the addresses where overwriting is expected to occur. As a result, the spare memory holds **data**, and the chip whose memory has been **copied** is **erased** to allow **data** to be written in the specified addresses.

GB 2,251,324 describes a directory system for a flash EEPROM array. A file clean-up system is used to **free unused** space for subsequent writing operations. The clean-up involves moving all of the **files** from blocks of the array which will be eventually erased. The **files** may be written to a RAM buffer before being written in a new location in...

...is updated, the blocks to be retained in the page are rearranged so that any **unused** areas on the page are merged into a single large **unused** area.

If the blocks are movable, then they cannot be addressed by fixed addresses. Instead...

9/5,K/10 (Item 10 from file: 348)
DIALOG(R) File 348:EUROPEAN PATENTS
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00858047

LOOSELY COUPLED MASS STORAGE COMPUTER CLUSTER
LOSER GEKOPPELTER RECHNERVERBAND MIT MASSENSPEICHER
GROUPEMENT A COUPLAGE LACHE D'ORDINATEURS DOTES DE MEMOIRES DE GRANDE
CAPACITE

PATENT ASSIGNEE:

SeaChange International, Inc., (2322460), 24 Acton Street, Maynard,
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PATENT (CC, No, Kind, Date): EP 860017 A1 980826 (Basic)

EP 860017 B1 051228

WO 1997015942 970501

APPLICATION (CC, No, Date): EP 96936889 961023; WO 96US16997 961023

PRIORITY (CC, No, Date): US 547565 951024

DESIGNATED STATES: DE; FI; FR; GB; IT; NL; SE

INTERNATIONAL PATENT CLASS (V7): H01J-013/00 ; G06F-011/00 ; H04N-007/173

CITED PATENTS (EP B): EP 232859 A; EP 584804 A; EP 654736 A; US 4868818 A;

US 4905145 A; US 5008882 A; US 5072371 A; US 5093826 A; US 5202980 A; US

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5471615 A; US 5544163 A

CITED REFERENCES (EP B):

STONEBRAKER M ET AL: "DISTRIBUTED RAID - A NEW MULTIPLE COPY ALGORITHM"
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ALAMITOS, IEEE. COMP. SOC. PRESS, vol. CONF. 6, 5 February 1990
(1990-02-05), pages 430-437, XP000279974 ISBN: 0-8186-2025-0

M M BUDDHIKOT ET AL: "Design of a large scale multimedia storage server"
COMPUTER NETWORKS AND ISDN SYSTEMS,NL,NORTH HOLLAND PUBLISHING.
AMSTERDAM, vol. 27, 1 December 1994 (1994-12-01), pages 503-517,
XP002093312 ISSN: 0169-7552

S GHANDEHARIZADEH ET AL: "Continuous Retrieval of Multimedia Data Using
Parallelism" IEEE TRANSACTIONS ON KNOWLEDGE AND DATA
ENGINEERING,US,IEEE INC. NEW YORK, vol. 5, no. 4, August 1993
(1993-08), pages 658-669, XP002105213 ISSN: 1041-4347

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B A GENNART: "Comparing Multimedia Storage Architectures" PROC. ON INT.
CONF. ON MULTIMEDIA COMPUTING AND SYSTEMS, May 1995 (1995-05), pages
323-328, XP002156331 Washington, DC, USA;

NOTE:

No A-document published by EPO

LEGAL STATUS (Type, Pub Date, Kind, Text):

Search Report: 010228 A1 Date of drawing up and dispatch of
supplementary:search report 20010112

Change: 20000223 A1 International Patent Classification changed:
20000104

Change: 070103 B1 Title of invention (French) changed: 20070103

Change: 070103 B1 Title of invention (English) changed: 20070103

Change: 070103 B1 Title of invention (German) changed: 20070103

Change: 061108 B1 Title of invention (French) changed: 20061108

Change: 061108 B1 Title of invention (English) changed: 20061108
Change: 061108 B1 Title of invention (German) changed: 20061108
Change: 060614 B1 Title of invention (French) changed: 20060614
Change: 060614 B1 Title of invention (English) changed: 20060614
Change: 060614 B1 Title of invention (German) changed: 20060614
Examination: 030319 A1 Date of dispatch of the first examination
report: 20030204
Change: 050427 A1 Title of invention (German) changed: 20050308
Grant: 051228 B1 Granted patent
Change: 060705 B1 Title of invention (German) changed: 20060705
Change: 060705 B1 Title of invention (English) changed: 20060705
Change: 060705 B1 Title of invention (French) changed: 20060705
Change: 061206 B1 Title of invention (German) changed: 20061206
Change: 061206 B1 Title of invention (English) changed: 20061206
Change: 061206 B1 Title of invention (French) changed: 20061206
Application: 970820 A1 International application (Art. 158(1))
Application: 980826 A1 Published application (A1with Search Report
;A2without Search Report)
Examination: 980826 A1 Date of filing of request for examination:
980518

LANGUAGE (Publication,Procedural,Application): English; English; English
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	200552	1650
CLAIMS B	(German)	200552	1419
CLAIMS B	(French)	200552	1805
SPEC B	(English)	200552	9127

Total word count - document A 0

Total word count - document B 14001

Total word count - documents A + B 14001

...SPECIFICATION on input line 30, the computer system 10 will have, before receipt of the data, allocated storage in each of the processor systems in one of a plurality of different ways...

...processor system would be responsible for servicing two gigabytes of the cluster volume for use not only for itself, but for the other processor systems or members of the cluster.

Under...

...volume has to be strictly managed; and third, changes to the file system structure (the creation or deletion of files) has to be replicated in each instance of the file system running on each cluster member.

Rather than use the cluster volume structure identified above, in...

...embodiment of the invention, the cluster architecture provides access to data objects and named fragment files, much in the way a file server provides "files" to network clients. Since the cluster members keep their file system private and only export access to the data objects, each cluster member can read, write, or delete files from its local file system without disrupting the other members of the cluster. There is

...is possible to write all five blocks of data substantially in parallel, thus making full use of the bandwidth available to the writing controller and, at the same time, distributing substantially...

9/5,K/13 (Item 13 from file: 348)
DIALOG(R) File 348:EUROPEAN PATENTS
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00482697

File-based transaction management system for a computing system.
Dateibasiertes Transaktionsverwaltungssystem für ein Rechnersystem.
Systeme de gestion des transactions basees sur fichiers dans un systeme de calcul.

PATENT ASSIGNEE:

International Business Machines Corporation, (200120), Old Orchard Road,
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INVENTOR:

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Mosteller, Richard C., 420 Lima Street, Sierra Madre, CA 91024, (US)
Gould, Joel M., 24 Prescott Road, Norwood, MA 02062, (US)
Mendelsohn, Noah R., 136 Thorndike Street, Arlington, MA 02174, (US)
Perchik, James, 295 Harvard Street, No.607, Cambridge, MA 02139, (US)

LEGAL REPRESENTATIVE:

Bailey, Geoffrey Alan et al (27921), IBM United Kingdom Limited
Intellectual Property Department Hursley Park, Winchester Hampshire
SO21 2JN, (GB)

PATENT (CC, No, Kind, Date): EP 454340 A2 911030 (Basic)
EP 454340 A3 930908

APPLICATION (CC, No, Date): EP 91303357 910416;

PRIORITY (CC, No, Date): US 509853 900416

DESIGNATED STATES: DE; FR; GB

INTERNATIONAL PATENT CLASS (V7): G06F-011/14; G06F-015/403; G06F-015/40;

CITED PATENTS (EP A): US 4752910 A

CITED REFERENCES (EP A):

ACM TRANSACTIONS ON DATABASE SYSTEMS vol. 9, no. 4, December 1984, NEW
YORK, NY, USA pages 503 - 525 , XP000211856 K. ELHARDT ET AL. 'A
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ACM TRANSACTIONS ON COMPUTER SYSTEMS vol. 2, no. 1, February 1984, NEW
YORK, NY, USA pages 24 - 38 B.G. LINDSAY ET AL. 'Computation and
Communication in R*: A Distributed Database Manager'

ACM TRANSACTIONS ON COMPUTER SYSTEMS vol. 3, no. 4, November 1985, NEW
YORK, NY, USA pages 261 - 293 , XP000039672 M.R. BROWN ET AL. 'The
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PROCEEDINGS OF THE 1989 INT. CONF. ON PARALLEL PROCESSING 8 August 1989,
PENN STATE UNIV., PENNSYLVANIA, USA pages 159 - 166 , XP000078553
KUN-LUNG WU ET AL. 'CACHE-BASED ERROR RECOVERY FOR SHARED MEMORY
MULTIPROCESSOR SYSTEMS'

PROCEEDINGS OF THE 13TH VLDB CONFERENCE 1987, BRIGHTON, GB pages 427 -
432 J. ELIOT B. MOSS 'Log-Based Recovery for Nested Transactions'

ACM COMPUTING SURVEYS vol. 13, no. 2, 1981, NEW YORK, USA pages 223 -
242 J.N. GRAY ET AL. 'THE RECOVERY MANAGER OF THE SYSTEM R DATABASE
MANAGER';

ABSTRACT EP 454340 A2

A data processing system is described which includes both volatile and nonvolatile memories and a distributed file control software system. A method is employed by the data processing system to recover from a malfunction which occurs during a file transaction and comprises the steps of: providing a log file to maintain a record of atomic file transactions; recording in volatile memory, old and new data images which result during a file transaction; writing the before image to a portion of the log file which is contained in nonvolatile memory; and in the event of a malfunction, employing the log file in nonvolatile memory to determine the status of an active file transaction and rolling back the

active transaction in the event the malfunction occurred prior to its completion. The new data image in a transaction is only written to the nonvolatile memory after the old data image has been written to nonvolatile memory. (see image in original document)

ABSTRACT WORD COUNT: 160

LEGAL STATUS (Type, Pub Date, Kind, Text):

Application: 911030 A2 Published application (A1with Search Report
;A2without Search Report)
Examination: 920226 A2 Date of filing of request for examination:
911219
Change: 930804 A2 International patent classification (change)
Change: 930804 A2 Obligatory supplementary classification
(change)
Search Report: 930908 A3 Separate publication of the European or
International search report
Withdrawal: 960424 A2 Date on which the European patent application
was withdrawn: 960216

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	EPABF1	793
SPEC A	(English)	EPABF1	5650
Total word count - document A			6443
Total word count - document B			0
Total word count - documents A + B			6443

...SPECIFICATION attention has been given to defining certain system transactions as "atomic" and assuring that a **record** is kept of all actions within a transaction until all such actions have been completed
...

...MIT Press, pp. 46-48, (1985). A "shadow paging" technique is there described wherein two **copies** of **image data** are always **made**, with the original **data copy** not being discarded until the transaction employing the new **image copy** has successfully completed.

Another distributed **data** -base management system with fault recovery capabilities is discussed in "Computation and Communication in R...said old data image, a value of said second variable;

performing said file transaction to **create** new **data**, recording an **image** of said new data in said log file in volatile memory and assigning to said...

...transaction has been performed;
means for copying the old and new images into a log **file** stored in non-volatile memory; and
means, in the event of a malfunction of the...

9/5,K/14 (Item 14 from file: 348)
DIALOG(R) File 348:EUROPEAN PATENTS
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00452607

STORAGE AND RETRIEVAL SYSTEM FOR DOCUMENT IMAGE DATA
SPEICHER- UND ABRUFSYSTEM FÜR DOKUMENTE MIT BILDDATEN
SYSTEME DE STOCKAGE ET D'EXTRACTION DE DONNÉES D'IMAGES DOCUMENTÉES
PATENT ASSIGNEE:

UNISYS CORPORATION, (842794), Township Line and Union Meeting Roads P.O.
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PATENT (CC, No, Kind, Date): EP 448673 A1 911002 (Basic)
EP 448673 B1 980701
WO 9106058 910502

APPLICATION (CC, No, Date): EP 90915057 901004; WO 90US5675 901004

PRIORITY (CC, No, Date): US 419354 891010; US 419566 891010; US 420081
891010; US 420082 891010

DESIGNATED STATES: DE; FR; GB

INTERNATIONAL PATENT CLASS (V7): G06F-015/167; G06F-017/40; G06F-017/30;
G06F-017/60; G06T-001/00;

CITED PATENTS (WO A): FR 2595487 A; EP 200593 A; EP 311807 A; FR 2624632 A;
DE 3116098 A; EP 130050 A; DE 3519110 A

NOTE:

No A-document published by EPO

LEGAL STATUS (Type, Pub Date, Kind, Text):

Application: 911002 A1 Published application (A1with Search Report
;A2without Search Report)

Examination: 911218 A1 Date of filing of request for examination:
911018

Examination: 941228 A1 Date of despatch of first examination report:
941110

Grant: 980701 B1 Granted patent

Oppn None: 990623 B1 No opposition filed

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	9827	910
CLAIMS B	(German)	9827	797
CLAIMS B	(French)	9827	1169
SPEC B	(English)	9827	26329
Total word count - document A			0
Total word count - document B			29205
Total word count - documents A + B			29205

...SPECIFICATION The Image Command Services 106 handles all disk-related processes, including image and standard system file management and local disk directory management. The Workstation Services 116 modules

handle communications to and...system, set attributes file system, synchronize file system.

An "attribute" is a characteristic about a **file system** that can be selectively retrieved and modified. **File system** attributes provide information about the operational state of a **file system**.

File system attributes include such characteristics as: change authorization, delete authorization, image space available, space available, space...

...for modifying attributes that are unique to each file, and deleting a file from a **file system**, and for changing the name of a file. These types of common file services includes...

...verify file integrity.

The file attributes make information about the files selectively available within a **file system**. Commonly used file attributes are such items as: access time, file type, last record, owner...

...maintained by the system in an index file. The index file is created by the **file management system** when the structured file is created.

In regard to applications using structured files, a structured the individual records/fields that make up the sequence.

The characteristics of all the **file systems** on a Storage Retrieval Module 10 are described by the contents of a constructed File...

9/5,K/17 (Item 2 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT
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00350172 **Image available**

IDENTIFYING DATA IN A DATA PROCESSING SYSTEM

IDENTIFICATION DES DONNEES DANS UN SYSTEME INFORMATIQUE

Patent Applicant/Assignee:

KINETECH INC,

Inventor(s):

FARBER David A,

LACHMAN Ronald D,

Patent and Priority Information (Country, Number, Date):

Patent: WO 9632685 A1 19961017

Application: WO 96US4733 19960409 (PCT/WO US9604733)

Priority Application: US 95425160 19950411

Designated States:

(Protection type is "patent" unless otherwise stated - for applications prior to 2004)

AL AM AT AU AZ BB BG BR BY CA CH CN CZ DE DK EE ES FI GB GE HU IS JP KE

KG KP KR KZ LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE

SG SI SK TJ TM TR TT UA UG UZ VN KE LS MW SD SZ UG AM AZ BY KG KZ MD RU

TJ TM AT BE CH DE DK ES FI FR GB GR IE IT LU MC NL PT SE BF BJ CF CG CI

CM GA GN ML MR NE SN TD TG

Main International Patent Class (v7): G06F-017/30

International Patent Class (v7): G06F-15:00

Publication Language: English

Fulltext Availability:

Detailed Description

Claims

Fulltext Word Count: 26150

English Abstract

In a data processing system (100), a mechanism identifies data items by

substantially unique identifiers (138, 140, 142, 144, 146, 148, 150) which depend on all of the data in the data items and only on the data in

the data items. Existence means determine whether a particular data item

is present in the system, by examining the identifiers of the plurality

of data items.

French Abstract

Dans un systeme informatique (100), un mecanisme identifie les donnees

au moyen d'identificateurs sensiblement specifiques (138, 140, 142, 144,

146, 148, 150), dependant de l'ensemble des informations contenues dans

chaque donnee et uniquement des informations contenues dans chaque donnee. Un element de verification d'existence determine si une

donnee

particuliere se trouve dans le systeme, en examinant les
identificateurs
de la pluralite de donnees.

Fulltext Availability:
Detailed Description

Detailed Description

... users of the data processing system, and it is desirable
that a single mechanism be **used** to address each of the
problems described above.

SUMMARY OF THE INVENTION

This invention provides...data items in order to decide whether they
can be safely removed from a local **file system** ;
the **system** can efficiently **record** and-preserve
any collection of **data** items;
the system can efficiently **make** a **copy** of any
collection of **data** items, to support a version control
mechanism for groups of the data items;
the system...the
present invention, primitive mechanisms, are now
described. The mechanisms described here depend on
underlying **data** management mechanisms to **create** , **copy** ,
read, and **delete data** items in the True File registry
126, as identified by a True File ID. This...of functions with the
above

properties
are the so-called message digest functions, which are
used in digital security systems as techniques for
authentication of data. These functions (or
algorithms) include...File does not have a True File ID or
compressed file ID, ignore it.

(iii) **Use** the Verify True File mechanism
(see extended mechanisms below) to confirm that the True
File...inventory in which each file named
identifies the data item on the volume being inventoried.

Data items are not **copied** from the **removable** volume
during the inventory process so
An operator must request that an inventory be
created for a specific volume. Once **created** , the volume
directory can be frozen or **copied** like any other
directory. **Data** items from either the physical volume or
the volume directory can be accessed using the **Open** File
operating system mechanism which will cause them to be
read from the physical volume...

...file encountered, excluding directories, the
following steps are taken.

(i) The True Name of the **file** is
computed. An entry is created in the True Name registry
124, including the True Name of the **file** using the
primitive mechanism. The source field of the True Name

registry entry 140 identifies the source **table** entry 144.

(ii) A pathname is created consisting of the path to the volume directory and the relative path of the **file** on the media. This path is linked to the computed True Name using Link Path to True Name primitive mechanism.

(D) After all **files** have been inventoried, the volume directory is frozen. The volume directory serves
56

as a **table** of contents for the volume. It can be copied using the Copy **File** or Directory primitive mechanism to create an "overlay" directory which can then be modified, making...

...this mechanism creates a new, synchronized version which includes the changes from each. Where a **file** is changed in both versions, this mechanism provides a user exit for handling the discrepancy...synchronization is complete, record the time of the final change, This time is to be **used** as the new start time the next time this directory is synchronized with the same...

9/5,K/19 (Item 4 from file: 349)
DIALOG(R) File 349:PCT FULLTEXT
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00188714 **Image available**

STORAGE AND RETRIEVAL SYSTEM FOR DOCUMENT IMAGE DATA
SYSTEME DE STOCKAGE ET D'EXTRACTION DE DONNEES D'IMAGES DOCUMENTEES

Patent Applicant/Assignee:

UNISYS CORPORATION,

Inventor(s):

NIGAM Ravi Kumar,
OSINSKI David Allen,
ROGAN James David,
WERNER Gerhard Maximillian Jr,
STEWART Mark Alden,
DANKO Martin Jon,
FORBES Brian Kirk,
BIRDSALL Michael G,

Patent and Priority Information (Country, Number, Date):

Patent: WO 9106058 A1 19910502

Application: WO 90US5675 19901004 (PCT/WO US9005675)

Priority Application: US 89354 19891010; US 89566 19891010; US 8981
19891010; US 8982 19891010

Designated States:

(Protection type is "patent" unless otherwise stated - for applications
prior to 2004)

AT BE CA CH DE DK ES FR GB IT JP KR LU NL SE

Main International Patent Class (v7): G06F-015/40

Publication Language: English

Fulltext Availability:

Detailed Description

Claims

Fulltext Word Count: 25498

English Abstract

A high-capacity and high-speed storage/retrieval system (Fig. 1) provides storage and retrieval for document images in digitized data form. Clusters of storage/retrieval modules (SRMs) (10) receive serialized image optical data read from documents (@:) via point to point

controllers (10po). The storage/retrieval modules (10) store and/or exchange digital data via individual controllers (10po) or line controllers (10oz) in the clusters of SRMs. A host computer (6) is operative to transmit via sever/controller (4B) commands and management

data to remotely located storage/retrieval modules (10). Local workstations (12, 14) are connected to the SRM's via standard interface

boards (10c) and remote workstations (12, 14) may be connected through

modems (10) and sever/controller (4BS) to other remote workstations.

French Abstract

Un systeme de stockage et d'extraction (Fig. 1) rapide et a capacite elevee permet le stockage et l'extraction des images documentees sous forme de donnees numeriques. Des grappes de modules de stockage et d'extraction (des SRM) (10) recoivent des donnees d'images optiques

et
numerotées sorties des documents (@:) par l'intermédiaire des
contrôleurs
point à point (10po). Lesdits modules (10) stockent et/ou échangent
des
données numériques par l'intermédiaire des contrôleurs individuels
(10po)
ou des contrôleurs de lignes (10oz) situés dans les grappes de SRM.
Un
ordinateur central (6) sert à les transmettre à travers des commandes
de
sectionnement et de contrôle (4B) et des données de gestion jusqu'à
des
modules de stockage et d'extraction (10) éloignés. Des postes de
travail
locaux (12, 14) sont connectés aux SRM par l'intermédiaire des cartes
d'interfaces normales (10c) et des postes de télétravail peuvent être
connectés à d'autres postes de télétravail par l'intermédiaire des
modems
(10) et par les unités de sectionnement et de contrôle (4BS)..

Fulltext Availability:
Detailed Description

Detailed Description

... field. The key
field houses a supplemental data structure called an
"index".

The "index" is **used** to identify a particular
record within a structured file. Indexes are
maintained by this system...set attributes f le
system, synchronize file system.

An 'attribute' is a characteristic about a
file system that can be selectively retrieved and
modified. **File system** attributes provide information
about the operational state of a **file system**.

File system attributes include such
characteristics as: change authorization, delete
authorization, image space available, space
available, space...

...for
modifying attributes that are unique to each file,
and deleting a file from a **file system**, and for
changing the name of a file. These types of common
file services includes...verify file
integrity.

The file attributes make information about
the files selectively available within a **file
system**. Commonly used file attributes are such items
as: access time, file type, last record, owner...

...maintained by the system in an index file. The index file is created by the **file** management **system** when the structured file is created.

in regard to applications using structured
filest a structured...retrieve the individual records/fields that
make
up the sequence.

The characteristics of all the **file** **systems**
on a Storage Retrieval module 10 are described by the
contents of a constructed File...

12/5,K/2 (Item 2 from file: 348)
DIALOG(R)File 348:EUROPEAN PATENTS
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00513224

Dynamic, finite versioning for concurrent transaction and query processing.
Dynamische, stufige Versionssteuerung für konkurrierende Zugriffs- und
Abfrageverarbeitung.

Contrôle dynamique et discret de versions pour le traitement concurrent de
transactions et d'interrogations.

PATENT ASSIGNEE:

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PATENT (CC, No, Kind, Date): EP 501180 A2 920902 (Basic)
EP 501180 A3 931013

APPLICATION (CC, No, Date): EP 92101781 920204;

PRIORITY (CC, No, Date): US 661046 910225

DESIGNATED STATES: DE; FR; GB

INTERNATIONAL PATENT CLASS (V7): G06F-015/40; G06F-009/46; G06F-015/403;

CITED PATENTS (EP A): WO 8400426 A; US 4648036 A

CITED REFERENCES (EP A):

IEEE TRANSACTIONS ON SOFTWARE ENGINEERING vol. SE11, no. 2, February
1985, NEW YORK US pages 205 - 212 A. CHAN ET AL. 'Implementing
distributed read-only transactions';

ABSTRACT EP 501180 A2

A dynamic, finite versioning scheme supports concurrent transaction and query processing in which there is no interference between transactions and queries and no quiescence of either transactions or queries for allowing queries to access a more up-to-date database. Only a finite number of logical versions are dynamically maintained on disk for a database page. Acquiring no locks, queries access appropriate query versions, according to their initiation times. Each corresponding query version of all the database pages constitutes a transaction-consistent, but perhaps slightly out-of-date, database snapshot. Through typical concurrency control mechanisms, different transactions access the most up-to-date versions, and their updates are allowed to be incrementally written into the database before they are committed. To save storage, a physical page copy may simultaneously represent multiple versions. The exact logical version(s) that a physical page copy represents changes dynamically and implicitly. A new mechanism using time-invariant and time-varying data structures is introduced to define query snapshots, to facilitate a new query snapshot to be taken without interrupting either the transaction or query processing, to identify dynamically appropriate versions for transaction and query accesses, and to allow efficient, on-the-fly garbage collection when it is recognized that only a single page copy is sufficient to represent the required logical versions. (see image in original document)

ABSTRACT WORD COUNT: 213

LEGAL STATUS (Type, Pub Date, Kind, Text):

Application: 920902 A2 Published application (Alwith Search Report

Change: 930407 A2 Representative (change)
 Change: 930512 A2 Representative (change)
 Change: 930929 A2 Obligatory supplementary classification
 (change)
 Search Report: 931013 A3 Separate publication of the European or
 International search report
 Change: 940921 A2 Representative (change)
 Withdrawal: 950125 A2 Date on which the European patent application
 was deemed to be withdrawn: 940726

LANGUAGE (Publication,Procedural,Application): English; English; English
 FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	EPABF1	2579
SPEC A	(English)	EPABF1	6133
Total word count - document A			8712
Total word count - document B			0
Total word count - documents A + B			8712

...CLAIMS previous active query list of queries occurring prior to the generation of said current query **snapshot** of said database, an identifier for a query being deleted from said previous active query ...system of claim 20 wherein said database version manager means further generates a previous query **snapshot** of said **database** from said current query **snapshot** for access by queries occurring prior to the generation of a next version of said...

...manager means further maintains a previous active query list of queries occurring prior to the **generation** of said current query **snapshot** of said **database** , an identifier for a query being deleted from said previous active query list when a...

...database being derived from said working version at a time when said changes are committed, **generates** a previous query **snapshot** of said **database** from said current query **snapshot** for access by queries occurring prior to the generation of a next version of said ...

...manager means further maintains a previous active query list of queries occurring prior to the **generation** of said current query **snapshot** of said **database** , an identifier for a query being deleted from said previous active query list when a...

...said time-invariant information is stored on said direct access storage means when a page **copy** is **created** while maintaining said time variant **information** in memory.

** Your Assignee & INV*

21/5,K/2 (Item 2 from file: 348)
DIALOG(R) File 348:EUROPEAN PATENTS
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01469862
INSTANT SNAPSHOT
UNMITTELBARER SCHNAPPSCHUSS
INSTANTANE

PATENT ASSIGNEE:

Network Appliance, Inc., (2617422), 495 East Java Drive, Sunnyvale,
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INVENTOR:

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VISWANATHAN, Srinivasan , 751 Saltillo Place, Fremont, CA 94536, (US)

LEGAL REPRESENTATIVE:

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PATENT (CC, No, Kind, Date): EP 1311949 A2 030521 (Basic)
WO 2002029573 020411

APPLICATION (CC, No, Date): EP 2001965976 010817; WO 2001US25763 010817

PRIORITY (CC, No, Date): US 642061 000818

DESIGNATED STATES: DE; FR; GB; IT; NL

EXTENDED DESIGNATED STATES: AL; LT; LV; MK; RO; SI

INTERNATIONAL PATENT CLASS (V7): G06F-011/14

NOTE:

No A-document published by EPO

LEGAL STATUS (Type, Pub Date, Kind, Text):

Application: 021023 A2 International application. (Art. 158(1))
Application: 021023 A2 International application entering European
phase
Application: 030521 A2 Published application without search report
Examination: 030521 A2 Date of request for examination: 20030317
Change: 040512 A2 Designated contracting states changed 20040325
Change: 061011 A2 Title of invention (German) changed: 20061011
Change: 061011 A2 Title of invention (English) changed: 20061011
Change: 061011 A2 Title of invention (French) changed: 20061011

LANGUAGE (Publication,Procedural,Application): English; English; English

INVENTOR:

LEWIS, Blake ...

...US)

EDWARDS, John, K ...

...US)

VISWANATHAN, Srinivasan ...

Set	Items	Description
S1	486189	(SNAPSHOT? OR MIRROR? OR COPY??? OR COPIE? ? OR IMAGE? OR - IMAGING OR CAPTUR? OR REPLICA? OR CLONE?) (7N) (FILE(2N)SYSTEM? ? OR FILESYSTEM? OR RECORD? ? OR DATA? ? OR INFORMATION?? OR - CONTENT? ? OR DATABASE? OR REPOSITOR?)
S2	47337	S1(7N) (CREAT? OR PRODUC? OR DEVELOP? OR ORIGINAT? OR MAKE? OR MAKING? OR MADE OR GENERAT?)
S3	3081	S1(7N) (DELET? OR REMOV? OR ERADICAT? OR ELIMINAT? OR ERAS?- ?? OR MARK??? (2N)FREE??? ? OR EXPUNG? OR EMPT??? ? OR DISCAR- D?)
S4	3539334	SUMMARY() (MAP OR MAPS) OR TABLE? OR FILE? ? OR DATABASE? OR RECORD?
S5	4429694	DEALLOCAT? OR DE()ALLOCAT? OR FREE OR INACTIV? OR OPEN??? - OR UNUSE? ? OR "NOT"(1N)USE? ? OR NON()ALLOCAT? OR NONALLOCAT? OR UNASSIGN? OR UN()ASSIGN?
S6	18630907	ALLOCAT? OR CLOSE? ? OR OCCUPIE? ? OR USE? ? OR RESERV? OR ASSIGN? OR "NOT"()FREE???
S7	5	S2 AND S3 AND S4 AND S5 AND S6
S8	0	S1 AND (INCLUSIVE()"OR" OR INCLUSIVEOR)
S9	145	(INCLUSIVE()"OR" OR INCLUSIVEOR)
S10	51	S9 AND (FILE(2N)SYSTEM? ? OR FILESYSTEM? OR RECORD? ? OR D- ATA? ? OR INFORMATION?? OR CONTENT? ? OR DATABASE? OR REPOSIT- OR?)
S11	0	S10 AND (FILE(2N)SYSTEM? ? OR FILESYSTEM?)
S12	0	S10 AND SNAPSHOT?
S13	1	S10 AND DATABASE?
S14	50	S10 NOT S13
S15	40	S14 NOT (PY>2000 OR PY=2001:2007)
S16	35	RD (unique items)
S17	6321	AU=(LEWIS B? OR LEWIS, B?)
S18	12409	AU=(EDWARDS J? OR EDWARDS, J?)
S19	1203	AU=(VISWANATHAN S? OR VISWANATHAN, S?)
S20	1033	BLAKE(2N)LEWIS OR (JOHN??? OR JON????) (2N)EDWARDS OR SRINI- VASAN(2N)VISWANATHAN
S21	0	S17 AND S18 AND S19
S22	93	S17:S20 AND (S1 OR S9)
S23	0	S22 AND (FILE(2N)SYSTEM? ? OR FILESYSTEM?)
S24	46	S22 NOT (PY>2000 OR PY=2001:2007)
S25	28	RD (unique items)
File	2:INSPEC	1898-2007/Jan W3 (c) 2007 Institution of Electrical Engineers
File	6:NTIS	1964-2007/Jan W4 (c) 2007 NTIS, Intl Cpyrght All Rights Res
File	8:EI	Compendex(R) 1884-2007/Jan W3 (c) 2007 Elsevier Eng. Info. Inc.
File	34:SciSearch	(R) Cited Ref Sci 1990-2007/Jan W4 (c) 2007 The Thomson Corp
File	35:Dissertation	Abs Online 1861-2007/Jan (c) 2007 ProQuest Info&Learning
File	56:Computer and Information Systems Abstracts	1966-2007/Jan (c) 2007 CSA.
File	60:ANTE: Abstracts in New Tech & Engineer	1966-2007/Jan (c) 2007 CSA.
File	62:SPIN	(R) 1975-2007/Jan W3 (c) 2007 American Institute of Physics
File	65:Inside Conferences	1993-2007/Feb 02 (c) 2007 BLDSC all rts. reserv.
File	94:JICST-EPlus	1985-2007/Feb W1 (c)2007 Japan Science and Tech Corp(JST)
File	95:TEME-Technology & Management	1989-2007/Jan W4 (c) 2007 FIZ TECHNIK

Bib. Npl. files

File 99:Wilson Appl. Sci & Tech Abs 1983-2007/Jan
(c) 2007 The HW Wilson Co.
File 111:TGG Natl.Newspaper Index(SM) 1979-2007/Feb 01
(c) 2007 The Gale Group
File 144:Pascal 1973-2007/Jan W3
(c) 2007 INIST/CNRS
File 239:Mathsci 1940-2007/Feb
(c) 2007 American Mathematical Society
File 256:TecInfoSource 82-2007/Aug
(c) 2007 Info.Sources Inc
File 434:SciSearch(R) Cited Ref Sci 1974-1989/Dec
(c) 2006 The Thomson Corp
File 583:Gale Group Globalbase(TM) 1986-2002/Dec 13
(c) 2002 The Gale Group

7/7/2 (Item 2 from file: 2)

DIALOG(R)File 2:INSPEC

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05726650 INSPEC Abstract Number: C9409-6160B-019

Title: Sybase Replication Server

Author(s): Gorelik, A.; Yongdong Wang; Deppe, M.

Author Affiliation: Sybase Inc., Emeryville, CA, USA

Journal: SIGMOD Record vol.23, no.2 p.469

Publication Date: June 1994 Country of Publication: USA

CODEN: SRECD8 ISSN: 0163-5808

Conference Title: 1994 ACM SIGMOD International Conference on Management of Data

Conference Sponsor: ACM

Conference Date: 24-27 May 1994 Conference Location: Minneapolis, MN, USA

Language: English Document Type: Conference Paper (PA); Journal Paper (JP)

Treatment: Practical (P); Product Review (R)

Abstract: Sybase Replication Server supports data replication in a distributed environment. Sybase Replication Server implements asynchronous, transactionally consistent log replication using primary copy replication model. Applications update the primary **database**. The updates are logged and scanned from the primary **database** log by the Log Transfer Manager which passes the updates to the primary Replication Server which determines which replicates are interested in the updates and forwards them to the appropriate replicate Replication Server. The replicate Replication Server applies the updates to the replicate **database** in the same serial transaction order that was applied at the primary site. A data replication request is called a subscription. When a subscription is **created**, its initial **data** set needs to be **copied** to the **replicate database**. When a subscription is dropped, its **data** set needs to be **deleted** from the **replicate database**. Both operations are performed dynamically and keep the data at the replicates transactionally consistent. The Replication Server scans the primary **database** log and continuously propagates the updates using store and forward techniques. Sybase Replication Server provides an **open** system interface to heterogeneous systems. A documented Log Transfer Interface allows foreign applications to submit updates at the primary. At the replicate, a flexible, programmable interface allows mapping of Transact SQL commands to any other language and allows users to **assign** actions to errors. (0 Refs)

Subfile: C

Set	Items	Description
S1	835819	(SNAPSHOT? OR MIRROR? OR COPY??? OR COPIE? ? OR IMAGE? OR - IMAGING OR CAPTUR? OR REPLICA? OR CLONE?) (7N) (FILE(2N)SYSTEM? ? OR FILESYSTEM? OR RECORD? ? OR DATA? ? OR INFORMATION?? OR - CONTENT? ? OR DATABASE? OR REPOSITOR?)
S2	9	S1(100N) (INCLUSIVE() "OR" OR INCLUSIVEOR)
S3	10437	S1(100N) (FILE(2N)SYSTEM? ? OR FILESYSTEM?)
S4	2054	S3(100N) (DELET? OR REMOV? OR ERADICAT? OR ELIMINAT? OR ERA- S??? OR MARK??? (2N)FREE??? ? OR EXPUNG? OR EMPT??? ? OR DISC- ARD?)
S5	8296	S3(100N) (CREAT? OR PRODUC? OR DEVELOP? OR ORIGINAT? OR MAK- E? OR MAKING? OR MADE OR GENERAT?)
S6	1671	S4(100N)S5
S7	1640	S6(100N) (SUMMARY() (MAP OR MAPS) OR TABLE? OR FILE? ? OR DA- TABASE? OR RECORD?)
S8	79	S7(100N) ((DELET? OR CREAT?) (5N)SNAPSHOT?)
S9	15	S8 NOT (PD>2000 OR PD=2001:2007)
File 275:Gale Group Computer DB(TM) 1983-2007/Feb 01 (c) 2007 The Gale Group		
File 621:Gale Group New Prod.Annou.(R) 1985-2007/Jan 26 (c) 2007 The Gale Group		
File 636:Gale Group Newsletter DB(TM) 1987-2007/Feb 01 (c) 2007 The Gale Group		
File 16:Gale Group PROMT(R) 1990-2007/Feb 01 (c) 2007 The Gale Group		
File 160:Gale Group PROMT(R) 1972-1989 (c) 1999 The Gale Group		
File 148:Gale Group Trade & Industry DB 1976-2007/Jan 26 (c)2007 The Gale Group		
File 624:McGraw-Hill Publications 1985-2007/Feb 02 (c) 2007 McGraw-Hill Co. Inc		
File 15:ABI/Inform(R) 1971-2007/Feb 02 (c) 2007 ProQuest Info&Learning		
File 647:CMP Computer Fulltext 1988-2007/Apr W2 (c) 2007 CMP Media, LLC		
File 674:Computer News Fulltext 1989-2006/Sep W1 (c) 2006 IDG Communications		
File 696:DIALOG Telecom. Newsletters 1995-2007/Feb 01 (c) 2007 Dialog		
File 369:New Scientist 1994-2007/Oct W4 (c) 2007 Reed Business Information Ltd.		
File 810:Business Wire 1986-1999/Feb 28 (c) 1999 Business Wire		
File 813:PR Newswire 1987-1999/Apr 30 (c) 1999 PR Newswire Association Inc		
File 610:Business Wire 1999-2007/Feb 02 (c) 2007 Business Wire.		
File 613:PR Newswire 1999-2007/Feb 02 (c) 2007 PR Newswire Association Inc		

FT Npl files

9/3,K/1 (Item 1 from file: 275)
DIALOG(R) File 275:Gale Group Computer DB(TM)
(c) 2007 The Gale Group. All rts. reserv.

02111541 SUPPLIER NUMBER: 19821533 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Backing up in the Windows NT environment. (Special supplement: Windows NT
VAR) (Technology Information)

Wong, William

Network VAR, v5, n10, p60(5)

Oct, 1997

ISSN: 1082-8818 LANGUAGE: English RECORD TYPE: Fulltext; Abstract

WORD COUNT: 3395 LINE COUNT: 00271

... a file system to be accessed as another logical disk drive.

How does a journaling file system relate to backup? First, it addresses the open file problem because files on a...

...job is started, Replica hooks into Windows NT's file system and sets up a **snapshot** (see Figure 1). The process creates a place for the log and creates hooks in the software to update the log with **data** that was current when the **snapshot** is started, but is overwritten by subsequent operations from applications. The setup time is only...until setup is complete. Replica's logging actually is more selective than a full journaling file system. For example, **Replica** only needs to log changes one time to **data** that was current when the **snapshot** is made; subsequent changes are irrelevant for the backup. Likewise, additions or changes to **information** created after the **snapshot** setup are not logged, but are only updated in the normal file system, because this information is of no importance to the backup operation.

The log information is saved once all information from the file system is saved. The backup data set contains all the necessary information needed to recreate the logical at the time of the snapshot. The log and hooks are **removed** once the backup operation is complete.

Replica is available for Windows NT and Novell IntranetWare...

Your Assignee

9/3,K/2 (Item 2 from file: 275)
DIALOG(R) File 275:Gale Group Computer DB(TM)
(c) 2007 The Gale Group. All rts. reserv.

01861499 SUPPLIER NUMBER: 17433074 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Toasting the new appliance.(Network Appliance's FAServer 450 dedicated
high-performance Network File System server) (Hardware
Review) (Evaluation)
Jones, Derek C.
LAN Magazine, p170(4)
Oct, 1995
DOCUMENT TYPE: Evaluation ISSN: 1069-5621 LANGUAGE: English
RECORD TYPE: Fulltext; Abstract
WORD COUNT: 3646 LINE COUNT: 00288

... know a disk problem occurred.
I'LL HAVE A WAFL

The FAServer uses a specialized file system designed for optimum NFS performance on a RAID 4 disk system. The Write Anywhere...

...system administrator to recover files they've lost. They simply copy them out of the snapshot subdirectory.

For administrators, snapshots can greatly simplify tape backups. Because a snapshot is an unchanging, static image of the file system, backing it up is ... well, a snap. Contrast that with the difficulties you usually face...

...on the disk and how frequently data blocks are changing. As mentioned earlier, when the file system needs to update a data block, it looks for an available block on which to blocks, it will delete the oldest snapshot, freeing up space for the new data.

THE IMPORTANCE OF BEING CONSISTENT

Every 10 seconds, the FAServer creates a special snapshot called...

...is used by the server on boot-up, to avoid having to perform a lengthy file system check after a power loss or system failure. Any noncommitted NFS requests not reflected by...

...a log of requests. By using a log of requests, Network Appliance ensures that the file system is not damaged beyond repair on failure of the NRAM. If the FAServer's NRAM...

9/3,K/3 (Item 3 from file: 275)
DIALOG(R) File 275:Gale Group Computer DB(TM)
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01722075 SUPPLIER NUMBER: 16271159 (USE FORMAT 7 OR 9 FOR FULL TEXT)
StingRay serves it up. (MTI Technology Corp's StingRay NFS 2.0 network file
server) (Product Announcement)

Morrison, Kristine M.

DEC Professional, v13, n11, p14(1)

Nov, 1994

DOCUMENT TYPE: Product Announcement ISSN: 0744-9216 LANGUAGE:

ENGLISH RECORD TYPE: FULLTEXT; ABSTRACT

WORD COUNT: 523 LINE COUNT: 00040

... a single drive failure will not interrupt the system.

StingRay NFS incorporates the Write Anywhere File Layout (WAFL)
system, designed by MTI. WAFL is integrated with RAID to simultaneously
write to...

...backup utility that allows users to independently recover corrupted or
deleted files from online copies. Snapshot makes a virtual copy of the
file system by copying the 128-byte file system pointer
information. The system administrator defines how often Snapshots are
taken and how long they are kept. Up to 20 Snapshots can be online
simultaneously. The system administrator can use a Snapshot to back up
complete static file systems while the active file system is still
online. In case of server failure, StingRay NFS is designed to reboot in...

Your Assignee

9/3,K/4 (Item 4 from file: 275)
DIALOG(R) File 275:Gale Group Computer DB(TM)
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01617276 SUPPLIER NUMBER: 14369720 (USE FORMAT 7 OR 9 FOR FULL TEXT)
NFS toaster. (Network Appliance Corp. FAServer Network File System server)
(Hardware Review) (Tested Mettle) (includes related articles on SFS 1.0
Benchmark, Network Appliance's value-added reseller program) (Evaluation)
UNIX Review, v11, n10, p77(6)
Oct, 1993
DOCUMENT TYPE: Evaluation ISSN: 0742-3136 LANGUAGE: ENGLISH
RECORD TYPE: FULLTEXT; ABSTRACT
WORD COUNT: 4047 LINE COUNT: 00313

... PC clients and a FAServer without further documentation.
Administration

Compared to administration of other NFS file servers, the FAServer
administration is simple. The System Administrator's Guide is easy to
understand...

...data security, snapshots have the same permissions as the original
files.

Figure 1 shows how snapshots work. A snapshot operation simply
creates a logical image of the file system --the user's view of names.
A snapshot does not consume additional disk space by duplicating a file's
contents ; it just copies the file-name pointers and attributes into a
hidden directory called s n a p...

...version is modified. When a user subsequently modifies the active
version of a file, a copy of the file blocks containing the new data is
created. The file pointer in the active directory points to the new data
blocks while the file pointer in the snapshot directory continues to
point to the old data block.

Users can retrieve snapshots of their files by changing their
directory to the hidden directory s n a p...

...file blocks are duplicated, how long snapshots can be kept depends on
how quickly the file system changes and how much disk space you have.
If changes occur slowly, snapshots can be...

...is an invaluable feature. We have lost count of the number of times we
inadvertently deleted all our work from earlier in the day and wished a
backup had been taken...

Your Assignee

9/3,K/5 (Item 1 from file: 621)
DIALOG(R) File 621:Gale Group New Prod.Annou.(R)
(c) 2007 The Gale Group. All rts. reserv.

01856663 Supplier Number: 54473287 (USE FORMAT 007 FOR FULLTEXT)
**Network Appliance Announces New Enterprise-Ready Data ONTAP Software;
Recovery and Availability Solutions Deliver True Data Protection and
Security.**

Business Wire, p0428
April 26, 1999
Language: English Record Type: Fulltext
Document Type: Newswire; Trade
Word Count: 840

... s market-proven operating system for Network Appliance(tm)
"filers."

SnapMirror and SnapRestore allow enterprise, **database** and
e-commerce customers to implement multi-terabyte data management systems
for remote mirroring, enterprise...

...Snapshot technology. SnapRestore is the industry's first data recovery
tool that can revert a **file system** to a previous Snapshot, so system
administrators can quickly revert a **file system** to a previous operating
state - such as before a data corruption or data integrity issue...

...takes to recover from application data corruption instances from hours
to minutes.

SnapMirror is a **data replication** tool designed to enhance **data**
availability and promote business continuance, for applications such as
disaster recovery. It delivers a fast, flexible enterprise solution for
implementing remote **mirroring** of **file systems** over local or wide area
networks at the block level. SnapMirror allows customers to mix...

...achieve the best mirroring price/performance with their systems,
including the use of a single **filer** to backup multiple filers.

SecureAdmin implements the SSH 1.x (Secure Shell) protocol in
DataOntap...

9/3,K/8 (Item 2 from file: 16)
DIALOG(R)File 16:Gale Group PROMT(R)
(c) 2007 The Gale Group. All rts. reserv.

06244850 Supplier Number: 54699808 (USE FORMAT 7 FOR FULLTEXT)

THAT'S DEDICATION.

Harrington, Tony

Unix & NT News, p19

Jan, 1999

Language: English Record Type: Fulltext

Document Type: Magazine/Journal; Trade

Word Count: 1949

... invincible. As NA points out, a thin server NFS is easy to administer because it **eliminates** operating system choices unrelated to file service. For instance, the NFS has just one **file system** that grows automatically when new disks are added. This eliminates the complexity of partitioning disk...

...back-ups, the NA NFS approach could hardly be simpler. It uses what NA terms " **Snapshots** ", or on-line, read-only **copies** of the entire **file system** . **Snapshots** can be **created** automatically several times a day and users can access them over NFS to examine or recover old versions of their files without help from the system administrator. The NFS **creates Snapshots** using a copy-on-write technique that consumes no disk space until files referenced by a **Snapshot** are **deleted** or modified.

While performance is achieved by using a very lightweight kernel shorn of superfluous...

9/3,K/9 (Item 3 from file: 16)
DIALOG(R)File 16:Gale Group PROMT(R)
(c) 2007 The Gale Group. All rts. reserv.

02836005 Supplier Number: 43815112 (USE FORMAT 7 FOR FULLTEXT)
Start-Up to Ship Unix File Server That Simplifies Setup and Maintenance
CommunicationsWeek, p25
May 3, 1993
Language: English Record Type: Fulltext
Document Type: Newsletter; Trade
Word Count: 593

... data to disks faster than other servers, includes a unique feature for copying and recovering **files**, and because it is a software-based product that uses standard off-the-shelf hardware, is cheaper to maintain and expand, he said.

FAS includes a proprietary **file system** called Write Anywhere File Layout, which can write data to disks much more rapidly than...

...allows recovery of deleted files without using tape backups and also can be used to **make** a tape backup while a server is on-line, the company said.

The system also...

...of Inexpensive Disks (RAID). RAID prevents loss of data when a disk fails, and the **Snapshot** software automatically keeps up to 20 logical **copies** of an entire **file system** on a RAID disk array.

Addresses Server Complaints

Perrell said that Snapshot is aimed at...

...said.

Mayes also said the NAC server writes data 10 times faster than a Sparc10 **file** server from Sun Microsystems Inc., while it reads data about 20 percent faster.

Analysts said...

Your Assign

9/3,K/12 (Item 1 from file: 624)
DIALOG(R) File 624:McGraw-Hill Publications
(c) 2007 McGraw-Hill Co. Inc. All rts. reserv.

0568420

PC File-Server Power : Network Appliance Corp.'s FAServer brings a ton of
PC muscle to NFS networking

Tom Yager

Open Computing, Vol. 11, No. 5, Pg 83

May, 1994

JOURNAL CODE: UNIX

SECTION HEADING: PRODUCT REVIEW ISSN: 0739-5922

WORD COUNT: 2,651

TEXT:

... throughput. The structure of the file system is unique to the FAServer.
NAC calls its file system WAFL, short for Write Anywhere File Layout.
WAFL optimizes disk I/O for RAID...

...snapshots and NVRAM.

On a regular basis, the FAServer makes a snapshot of its current file
system state; the system default is set to take a snapshot every 10
seconds, but it is user-configurable. Changes to the file system are then
seen as incremental (snapshot plus new data), until the next snapshot
gathers all the changes, and so on. These periodic snapshots, which NAC
calls "consistency points," let the system reboot without integrity
checks. Each snapshot ensures that the file system elements (data ,
inodes, free maps) are fully synchronized. On reboot, the FAServer
automatically reverts to its most...

...points is extended to users as well. You can tell the FAServer to make a
snapshot of the file system any time you like. It places a marker in
the support structure that allows everything... is tagged with the
snapshot's name. In that directory are pointers to all the files two
levels up, their states frozen as of the time of the snapshot. So you...

9/3,K/13 (Item 1 from file: 15)
DIALOG(R)File 15:ABI/Inform(R)
(c) 2007 ProQuest Info&Learning. All rts. reserv.

00760569 94-09961

NFS toaster

Anonymous

UNIX Review v11n10 PP: 77-87 Oct 1993

ISSN: 0742-3136 JRNL CODE: UXR

WORD COUNT: 3451

...TEXT: PC clients and a FAServer without further documentation.

ADMINISTRATION

Compared to administration of other NFS file servers, the FAServer administration is simple. The System Administrator's Guide is easy to understand...

...data security, snapshots have the same permissions as the original files.

Figure 1 shows how **snapshots** work. (Figure 1 omitted) A **snapshot** operation simply creates a logical **image** of the **file system** --the user's view of names. A **snapshot** does not consume additional disk space by duplicating a file's **contents**; it just **copies** the file-name pointers and attributes into a hidden directory called ***snapshot**. File access through...

...version is modified. When a user subsequently modifies the active version of a file, a **copy** of the file blocks containing the new **data** is created. The file pointer in the active directory points to the new data blocks while the file pointer in the **snapshot** directory continues to point to the old **data** block.

Users can retrieve **snapshots** of their files by changing their directory to the hidden directory

***snapshot** and copying files...

...file blocks are duplicated, how long snapshots can be kept depends on how quickly the **file system** changes and how much disk space you have. If changes occur slowly, snapshots can be...

...is an invaluable feature. We have lost count of the number of times we inadvertently **deleted** all our work from earlier in the day and wished a backup and been taken...

9/3,K/14 (Item 1 from file: 647)
DIALOG(R)File 647:CMP Computer Fulltext
(c) 2007 CMP Media, LLC. All rts. reserv.

01042723 CMP ACCESSION NUMBER: OST19950206S0007
File Shadow (HP Briefs)
OPEN SYSTEMS TODAY, 1995, n 168, PGHP8
PUBLICATION DATE: 950206
JOURNAL CODE: OST LANGUAGE: English
RECORD TYPE: Fulltext
SECTION HEADING: HP Focus
WORD COUNT: 78

ZShadow is a Unix **file - system** shadowing product that takes periodic `` **snapshots** '' of an HP workstation's **file system** , allowing a user to return to a previous version of a file via a mouse...

...intervals at which the file snapshots are taken, stored and deleted.
Users can access ZShadow **files** for browsing or writing.

ZShadow costs \$695 for a desktop package and \$1,195 for...